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EXAMINER	
PATEL, DHAIRYA A	

ART UNIT	PAPER NUMBER
2151	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/995,371	CRUICKSHANK ET AL.	
	Examiner	Art Unit	
	Dhairya A. Patel	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to communication filed on 5/18/2005. Claims 1-26 are rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8,10-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feinberg et al. (hereinafter Feinberg) U.S. Patent # 6,798,745 in view of Dziekan et al. U.S. Patent 6,704,288 (hereinafter Dziekan).

As per claim 1, Feinberg teaches a system for use with a broadband network, the system comprising:

-a network-metrics apparatus (Fig. 1) configured to obtain first metrics of performance of at least a portion of the broadband network (column 5 lines 31-45);

The reference teaches gateway is configured to obtain QoS performance parameter data or also known as QoS events (first metrics) of the network.

-a data-processing apparatus coupled to the network-metrics apparatus and configured to combine a plurality of first metrics into a second metric of network performance indicative of a higher-level of network performance than indicated by the first metrics (column 5 lines 31-60); and

The reference combining QoS events into QoS parameter value (second metric of network performance) to indicate which QoS events has been lost (higher-level of network performance)

-a data-arranging apparatus coupled to the data-processing apparatus and configured to arrange at least a portion of the first metrics and the second metric into a predetermined format (column 5 lines 31-60)

The reference teaches QoS events (first metric) represents network delay jitter, other performance data (predetermined format) and the QoS parameter value (second metric) represents total number of packets lost (predetermined format)

Feinberg fails to teach said first metric comprises a cable-modem hour metric. Dziekan teaches first metric comprises a cable-modem hour metric (column 4 lines 37-45,lines 48-51)(column 5 lines 39-58). The reference teaches monitoring the network performance by requesting the diagnostic tests on the network element including cable-modem and receiving information on how much the throughput is on the cable modem (cable modem hour metric) and also receiving information on BER rates, carrier-to-noise ratios or high frame error rates (first metric with cable-modem hour metric). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to implement Feinberg's invention in Dziekan's invention to come up with having first metric comprising cable-modem hour metric. The motivation for doing so would have been to use the first metric which comprises cable-modem hour metric information to know how much the throughput is on the cable modem so if there

is a low cable modem throughput, one can request a diagnostic tests through the diagnosis element.

As per claim 2, Feinberg and Dziekan teaches the system of claim 1, but Feinberg further teaches wherein the first metrics are indicative of different network performance issues (column 5 lines 34-39).

The reference teaches the QoS events are number of network performance indicating types including packet loss, jitter, network delay (different network performance issues).

As per claim 3, Feinberg and Dziekan teaches the system of claim 2, but Feinberg further teaches wherein the second metric is generic to the different network performance issues of the first metrics (column 5 lines 45-49), and wherein the combiner is configured to combine another plurality of first metrics into another second metric and to combine the second metric and the another second metric into a third metric that is generic to the second metric and the another second metric (column 5 lines 49-60).

The reference teaches QoS events (first metric) is used to obtain QoS parameter value (second metric) which is used to obtain QoS acceptance value (third metric) which is generic to second metric and another second metric because it is used to see if the value is within the acceptance range.

As per claim 4, Feinberg and Dziekan teaches the system of claim 3, but Feinberg further teaches wherein the data-processing apparatus is configured to combine the first and second metrics in accordance with a topology of the network associated with the first and second metrics, respectively (column 5 lines

45-49), wherein the data-processing apparatus is further configured to determine a plurality of third metrics and to combine the third metrics in accordance with a topology of the network associated with the third metrics (column 5 lines 50-60).

The reference teaches combining QoS events (first metric) to obtain QoS parameter value (second metric) according to the network topology and to use the combination to come up with QoS acceptance value and the range (third metrics) associated with the network topology to see if the values are in the acceptance range of the network.

As per claim 5, Feinberg and Dziekan teaches the system of claim 1, but Feinberg further teaches wherein the data-processing apparatus is configured to combine the first metrics in accordance with a topology of the network associated with the first metrics (Fig. 1 & 2)(column 5 lines 30-49).

As per claim 6, Feinberg and Dziekan teaches the system of claim 5, but Feinberg further teaches wherein the data-processing apparatus is configured to combine the first metrics of a selected portion of the network, the selected portion being less than all of the network (Fig. 1) (column 5 lines 40-54).

The reference teaches the QoS events (first metrics) are obtained from the network (Fig. 1) which is selected portion being less than all of the network.

As per claim 7, Feinberg and Dziekan teaches the system of claim 1, but Feinberg further teaches wherein the first metrics are indicative of performance of the least a portion of the broadband network over time. (column 4 lines 24-36)(column 5 lines 36-50).

The reference teaches the QoS events are recorded of the network performances which are recorded over time.

As per claim 8, Feinberg and Dziekan teaches the system of claim 1, but Feinberg further teaches wherein the at least a portion of the broadband network is a selected portion of the broadband network, the selected portion being less than all of the network (Fig. 1)(column 2 lines 36-60).

The reference teaches a selected portion of the broadband network which is less than all of the network.

As per claim 10, Feinberg and Dziekan teaches the system of claim 1, but Feinberg further teaches wherein the data-processing apparatus is configured to weight the first metrics differently in combining the first metrics (column 5 lines 40-49).

The reference teaches the raw data (first metrics) are shaped differently (weight differently) in different combination in combining the first metrics. The reference also teaches the raw data which includes QoS events is a packet loss event which is used to produce QoS parameter value (second metrics) which is produced by summing packet loss (first metrics) over one second time period which means it is weighting the first metrics differently during that time period.

As per claim 11, Feinberg and Dziekan teaches the system of claim 10, but Feinberg further teaches wherein different weights applied to different first metrics are dependent upon at least one of perceived priority of the different first metrics and perceived impact of the different first metrics on network performance (column 5 lines 40-49).

The reference teaches the raw data (first metrics) are shaped differently (weight differently) in different combination in combining the first metrics which has an impact on the network performance.

As per claim 12, Feinberg and Dziekan teaches the system of claim 1, but Feinberg further teaches wherein the data-processing apparatus is configured to collect raw data associated with network performance and to normalize the raw data to obtain the first metrics (column 5 lines 36-49).

The reference teaches the collecting raw data associated with network performance and shaping the raw data (normalize) to obtain QoS events (first metric).

As per claim 13, Feinberg and Dziekan teaches the system of claim 1, but Feinberg further teaches wherein the network-metrics apparatus, the data-processing apparatus, and the data-arranging apparatus each comprise computer-executable instructions configured to cause a computer to process data (column 7 lines 45-67).

As per claim 14, Feinberg and Dziekan teaches the system of claim 1, but Feinberg further teaches wherein the network-metrics apparatus is configured to obtain the first metrics by collecting raw data from the network, and comparing the raw data against thresholds indicative of levels of performance of the network (column 5 lines 36-60).

The reference teaches QoS events with the QoS acceptable range (thresholds) indicative of if it falls within the range or out of range (indicative of levels of performance of the network)

As per claim 15, Feinberg and Dziekan teaches the system of claim 14 but Feinberg fails to teach the network is a DOCSIS network including cable modems and cable modem termination systems, and the first metrics indicate numbers of cable-modem hours at the levels of performance of the network. Dziekan teaches network is a DOCSIS network including cable modems and cable modem termination systems, and the first metrics indicate numbers of cable-modem hours at the levels of performance of the network (Column 1 lines 31-53). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to implement Feinberg's invention in Dziekan's invention to come up with DOCSIS network with cable modems and cable modem termination system to indicate number of cable modem hours by the first metric. The motivation for doing so would have been to monitor the levels of performance of the network.

As per claim 16, Feinberg teaches a system for use with a broadband network (Fig. 1), the system comprising:

-a collector configured to collect raw data, indicative of network operation, from the network (column 5 lines 30-45);

The reference teaches collecting raw data including QoS events which includes network delay, jitter or other performance data (indicative of network operation).

-first-metric determining means, coupled to the collector, for receiving the raw data from the collector, manipulating the raw data to periodically determine first metrics based on the raw data, the first metrics being indicative of a plurality

of levels of network performance, and being associated with a time period (column 5 lines 30-60); and

The reference teaches QoS events (metric) which are manipulated from the raw data and the QoS events include network delay, jitter or other performance data (plurality of levels of network performance) in which a QoS parameter value is calculated from the QoS events in one-second period (time period).

-combining means, coupled to the determining means, for combining the first metrics, according to network topology and network characteristics associated with the first metrics, into time-dependent second metrics indicative of at least amounts of time that the associated network characteristics were at corresponding ones of the plurality of levels of network performance (column 5 lines 30-60).

The reference teaches QoS events (first metric) which are manipulated from the raw data and the QoS events include network delay, jitter or other performance data (plurality of levels of network performance) in which a QoS parameter value (second metric) is calculated from the QoS events in one-second period (amount of time) which reflect the network characteristics because it checks if the QoS parameter value is within the QoS acceptance range (levels of network performance).

Feinberg fails to teach said first metric comprises a cable-modem hour metric. Dziekan teaches first metric comprises a cable-modem hour metric (column 4 lines 37-45,lines 48-51)(column 5 lines 39-58). The reference teaches

monitoring the network performance by requesting the diagnostic tests on the network element including cable-modem and receiving information on how much the throughput is on the cable modem (cable modem hour metric) and also receiving information on BER rates, carrier-to-noise ratios or high frame error rates (first metric with cable-modem hour metric). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to implement Feinberg's invention in Dziekan's invention to come up with having first metric comprising cable-modem hour metric. The motivation for doing so would have been to use the first metric comprising cable-modem hour metric information to know how much the throughput is on the cable modem so if there is a low cable modem throughput, one can request a diagnostic tests through the diagnosis element.

As per claim 17, Feinberg and Dziekan teaches the system of claim 16, but Feinberg further teaches wherein the combining means combines the metrics into a hierarchy of combinations of metrics, including at least third metrics resulting from combinations of second metrics, the hierarchy being arranged according to network performance characteristic (column 5 lines 28-60).

The reference teaches combining QoS event (first metric) to come up with QoS parameter value (second metric) which is used to come up with QoS acceptance value (third metrics) which arranged according to network performance characteristic because QoS events are of raw data which is used to produce parameter value in a certain time period which is used to produce QoS

acceptance value to check if value falls within the range (hierarchy of combination of metrics).

As per claim 18, Feinberg and Dziekan teaches the system of claim 17, but Feinberg further teaches wherein the hierarchy of combinations of metrics includes a summary of performance, in terms amounts of time that associated network characteristics were at corresponding ones of the plurality of levels of network performance (column 5 lines 40-51), of at least one of a selected portion of the network and the network(Fig. 1), the hierarchy further comprising sub-metrics of network characteristics contributing to the summary, and sub-sub-metrics of network characteristics contributing to the sub-metrics (Fig. 1)(column 5 lines 40-54).

The reference teaches combining QoS event (first metric) to come up with QoS parameter value (second metric) which is used to come up with QoS acceptance value (third metrics) includes network delay, jitter, packets lost in one time period (summary of performance). The reference also teaches combining QoS event (first metric) to come up with QoS parameter value (second metric) which is used to come up with QoS acceptance value (third metrics) which arranged according to network performance characteristic because QoS events are of raw data which is used to produce parameter value in a certain time period which is used to produce QoS acceptance value to check if value falls within the range (hierarchy comprising sub-metrics).

As per claim 19, Feinberg and Dziekan teaches the system of claim 17, but Feinberg further teaches wherein the second and third metrics are indicative

of sums of amounts of time that the associated network characteristics were at corresponding ones of the plurality of levels of network performance for network elements associated with the network characteristics (column 5 lines 40-55).

The reference teaches the calculating parameter value (second metric) from the QoS events (first metric) and also calculating QoS acceptance value (third value) which is done in one time period (indicative of sums of amount of time).

As per claim 20, Feinberg and Dziekan teaches the system of claim 16, but Feinberg further teaches wherein the of levels network performance are at least degradation in the degraded and severely degraded degrees, major issues under that, and direct and indirect contributors to the major issues.(column 5 lines 15-27)(column 5 lines 49-64)

The reference teaches the values are indicative of the degradation in the network performance in the major issues such as packets lost, number of packets received, network delay, jitter (degraded issues, major issues)

As per claim 21, Feinberg and Dziekan teaches the system of claim 16, but Feinberg further teaches wherein the first-metric determining means and the combining means are configured to be disposed in a node connected to at least a portion of the network. (Fig. 1 & 2) (column 5 lines 10-26)(column 5 lines 36-60)

The reference teaches the QoS events(first metric) are determined and the combined into QoS parameter value (second metric) in the gateway (Fig. 1 & 2 , node connected to at least a portion of the network)

As per claim 22, Feinberg and Dziekan teaches the system of claim 16, but Feinberg further teaches wherein manipulating the raw data includes comparing data related to the raw data against predetermined thresholds(column 5 lines 40-55), the thresholds being indicative of breaking points between acceptable and degraded performance of a network issue related to the raw data and degraded and severely degraded performance of the related network issue (column 5 lines 15-26) (column 5 lines 40-64)

As per claim 23, Feinberg and Dziekan teaches the system of claim 16, but Feinberg further teaches wherein the first-metric determining means is configured to determine the first metrics in substantially real time. (column 5 lines 30-50)

As per claim 24, Feinberg and Dziekan teaches the system of claim 16, but Feinberg further teaches wherein the second metrics are indicative of degraded network element hours and severely degraded network element hours. (column 5 lines 15-26) (column 5 lines 45-60)

As per claim 25, Feinberg teaches a computer program product for consolidating broadband network performance and comprising computer-executable instructions for causing a computer to:

-periodically collect network activity data for elements of a broadband network;(column 5 lines 30-45) use the network activity data to determine amounts of time that the network elements are degraded for a plurality of network issues (column 5 lines 15-22); combine the amounts of time that the network elements are degraded according to the network issues and according to

network topology to determine cumulative amounts of time of degraded network element performance for the plurality of issues(column 6 lines 37-56);

The reference teaches determine and combine amount of total time (cumulative amount) of the packet lost (degraded network performance) according to the network topology and network issues

-combine cumulative amounts of time of associated issues into cumulative amounts of time for groups of related issues; and combine cumulative amounts of time for groups of related issues to determine at least one summary amount of time of degraded performance of network elements in the network (column 6 lines 37-56).

The determining and combining total amount of time(one summary amount of time) for the packets lost (degraded performance) in the network.

Feinberg fails to teach said network activity data comprises a cable modem hour metric. Dziekan teaches network activity data comprises a cable modem hour metric (column 4 lines 37-45,lines 48-51)(column 5 lines 39-58). The reference teaches monitoring the network performance by requesting the diagnostic tests on the network element including cable-modem and receiving information on how much the throughput is on the cable modem (cable modem hour metric) and also receiving information on BER rates, carrier-to-noise ratios or high frame error rates (network activity data which comprises cable-modem hour metric). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to implement Feinberg's invention in Dziekan's invention to come up with having network activity data comprising cable-modem

hour metric. The motivation for doing so would have been to know how the network behaves by monitoring the network activity data and how much the throughput is on the cable modem which is on the network, so if there is a low cable modem throughput, one can request a diagnostic tests through the diagnosis element.

As per claim 26, Feinberg and Dziekan teaches the computer program product of claim 25 but Feinberg further teaches wherein the cumulative amounts and the summary amount comprise individual values associated with each of at least one level of network degradation regardless of a number of network elements associated with the individual values (column 6 lines 37-56).
The reference teaches calculating total time (cumulative amounts) of the packet lost (individual value) (network degradation) regardless of number of network elements.

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feinberg et al. U.S. Patent # 6,798,745 in view of Dziekan et al. U.S. Patent # 6,704,288 (hereinafter Dziekan) further in view of Veres et al. U.S. Patent # 6,807,156 (hereinafter Veres).

As per claim 9, Feinberg and Dziekan teaches the system of claim 1 wherein the data arranging apparatus but both fails to teach is configured to graph at least one of the metrics over a length of time. Veres teaches graphing at least one of the metrics over a length of time. (Fig. 12A,12B,12C,13). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to implement Feinberg's invention in Veres's invention to come up with

graphing at least one of the metrics over time. The motivation for doing so would have been to see how the network performance behaves over period of time.

Remarks

4. As a remark, Applicant asserted:

As per claim 1, Feinberg does not address "network parameters". Examiner respectfully disagrees with the applicant because in column 5 lines 15-28, Feinberg states the QoS acceptance value range field contains the acceptable limits and values for monitored QoS parameters (network parameters). The values that fall outside of the acceptable limits and values are indicative of discernible degradation in network performance which means the acceptable limits and values are parameters which give information about the network and how the network should behave over certain period of time because the acceptable limits and values are over certain time period.

Furthermore applicant also asserts that Feinberg does not disclose "displaying metrics over time, or using derived metric to identify and isolate network issues". Examiner asserts that claim 1 does not contain "displaying metrics over time, or using derived metric to identify and isolate network issues" so therefore that issue has not been addressed in the office action.

As per remark on Page 10 first paragraph, Examiner does not understand what the applicant is trying to say. For example applicant states "Applicant submit no quality metrics as shown in block 128 of applicant's figure 7, let alone applicants' claimed cable-modem hour, are disclosed or suggested by Feinberg".

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A). "Quality of Service Management for Voice over Packet networks" by Feinberg U.S. Patent # 6,798,745

B). "Arrangement for discovering the topology of an HFC access network" by Dziekan et al. U.S. Patent # 6,704,288

C). "Scalable Real-time Quality of service monitoring and analysis of service dependent subscriber satisfaction in IP networks" by Veres et al. U.S. Patent # 6,807,156

6.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dhairya A. Patel whose telephone number is 571-272-4066. The examiner can normally be reached on 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on 571-272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DAP

ZARNI MAUNG
SUPERVISORY PATENT EXAMINER